

## AMENDMENTS TO THE CLAIMS

2 Please amend the claims of the present application as set forth below. In  
3 accordance with the PTO's revised amendment format, a detailed listing of all claims has  
4 been provided. This listing of claims will replace all prior versions and listings of claims  
5 in the application. Changes to the claims are shown by strikethrough or double brackets  
6 (for deleted matter) and underlining (for added matter).

7 By way of overview, claims 1-44 are currently pending. More specifically, the  
8 status of the claims is indicated below:

- a) Claims 30-32 are currently amended;
- b) Claims 1-8 and 10-29 are original;
- c) Claim 9 has the status of previously presented; and
- d) Claims 33-44 are new.

### Listing of Claims

15 1. (Original) A server system, comprising:  
16 one or more computers;  
17 an application executing on the computers to receive and process client requests;  
18 and

19 a constraint system to constrain operation of the application according to multiple  
20 different constraints, the constraint system comprising a hierarchy of constraint layers,  
21 with each constraint layer containing a set of one or more constraints that customize  
22 operation of the application.

1       2. (Original) A server system as recited in claim 1, wherein the hierarchy  
2 comprises a constraint layer that contains legally mandated constraints to constrain  
3 operation of application according to legal principles.

4

5       3. (Original) A server system as recited in claim 1, wherein the hierarchy  
6 comprises a constraint layer that contains company-mandated constraints to constrain  
7 operation of the application according to preferences of a company that operates the  
8 application.

9

10      4. (Original) A server system as recited in claim 1, wherein the hierarchy  
11 comprises a constraint layer that contains customer constraints to constrain operation of  
12 the application according to preferences of customers.

13

14      5. (Original) A server system as recited in claim 1, wherein the hierarchy  
15 comprises a constraint layer that contains cultural constraints to constrain operation of the  
16 application according to cultural aspects.

17

18      6. (Original) A server system as recited in claim 1, wherein the hierarchy  
19 comprises a constraint layer that contains end user constraints to constrain operation of  
20 the application according to preferences of an end user.

21

22      7. (Original) A server system as recited in claim 1, wherein the constraint layers  
23 are organized within the hierarchy such that a first constraint layer limits a second  
24 constraint layer but the second constraint layer does not limit the first constraint layer.

1       8. (Original) A server system as recited in claim 1, further comprising a constraint  
2 resolver to resolve the constraint layers so that operation of the application is constrained  
3 by a sum of the constraints in the layers.

4

5       9. (Previously presented) A server system comprising:  
6           one or more computers; and  
7           a multi-layer application executing on the computers to handle client requests, the  
8 multi-layer application comprising:

9           a problem-solving logic layer to process the client requests according to an  
10 associated problem domain, the problem-solving logic layer containing one or more  
11 execution models to perform various sets of tasks when processing the client requests, the  
12 problem-solving logic layer producing replies to the client requests;

13           a presentation layer to structure the replies produced by the problem-solving logic  
14 layer in a manner that makes the replies presentable on various client devices; and

15           a constraint hierarchy of multiple constraint layers, each constraint layer  
16 containing a set of one or more constraints that specify how the replies should be  
17 structured to customize the replies for specific sets of conditions.

18

19       10. (Original) A server system as recited in claim 9, wherein constraint layers can  
20 be selectively added or removed from the constraint hierarchy independently of other  
21 layers in the multi-layer application to produce different sets of constraints.

22

23       11. (Original) A server system as recited in claim 9, wherein the constraint  
24 hierarchy comprises a constraint layer that contains legally mandated constraints that

1 constrain the presentation layer to structure the replies to comply with certain legal  
2 principles.

3

4 12. (Original) A server system as recited in claim 9, wherein the constraint  
5 hierarchy comprises a constraint layer that contains company-mandated constraints that  
6 constrain the presentation layer to structure the replies according to preferences of a  
7 company that operates the application.

8

9 13. (Original) A server system as recited in claim 9, wherein the constraint  
10 hierarchy comprises a constraint layer that contains customer-oriented constraints that  
11 constrain the presentation layer to structure the replies according to preferences of  
12 customers.

13

14 14. (Original) A server system as recited in claim 9, wherein the constraint  
15 hierarchy comprises a constraint layer that contains cultural constraints that constrain the  
16 presentation layer to structure the replies according to cultural aspects.

17

18 15. (Original) A server system as recited in claim 9, wherein the constraint  
19 hierarchy comprises a constraint layer that contains end user constraints that constrain the  
20 presentation layer to structure the replies according to preferences of end users.

21

22 16. (Original) A server system as recited in claim 9, wherein the constraint layers  
23 can be removed or added to modify the set of constraints imposed on structuring the  
24 replies.

1        17. (Original) A computer software architecture embodied on one or more  
2 computer-readable media, comprising:

3                a constraint hierarchy of multiple constraint layers, each constraint layer  
4 containing a set of one or more constraints that constrain operation of an application, the  
5 constraint layers being organized within the constraint hierarchy such that a first  
6 constraint layer limits a second constraint layer but the second constraint layer does not  
7 limit the first constraint layer; and

8                a constraint resolver to resolve the constraint layers so that operation of the  
9 application is constrained by a set of the constraints in the constraint layers.

10  
11        18. (Original) A computer software architecture as recited in claim 17, wherein  
12 constraint layers are selectively added to or removed from the constraint hierarchy to  
13 form different sets of constraints on the operation of the application.

14  
15        19. (Original) A computer software architecture as recited in claim 17, wherein  
16 the constraint hierarchy comprises a constraint layer that contains legally mandated  
17 constraints to constrain operation of the application according to legal principles.

18  
19        20. (Original) A computer software architecture as recited in claim 17, wherein  
20 the constraint hierarchy comprises a constraint layer that contains company-mandated  
21 constraints to constrain operation of the application according to preferences of a  
22 company that operates the application.

1       21. (Original) A computer software architecture as recited in claim 17, wherein  
2 the constraint hierarchy comprises a constraint layer that contains customer constraints to  
3 constrain operation of the application according to preferences of customers.

4

5       22. (Original) A computer software architecture as recited in claim 17, wherein  
6 the constraint hierarchy comprises a constraint layer that contains cultural constraints to  
7 constrain operation of the application according to cultural aspects.

8

9       23. (Original) A computer software architecture as recited in claim 17, wherein  
10 the constraint hierarchy comprises a constraint layer that contains end user constraints to  
11 constrain operation of the application according to preferences of an end user.

12

13       24. (Original) A method comprising:  
14            storing a hierarchy of constraints, each constraint being configured to constrain  
15 operation of a server application; and  
16            evaluating an operation of the server application in view of the hierarchy of  
17 constraints to modify operation according to the constraints in the hierarchy.

18

19       25. (Original) A method as recited in claim 24, further comprising adding or  
20 removing constraints from the hierarchy to alter [[operation of]] the server application.

21

22       26. (Original) A method as recited in claim 24, wherein the hierarchy of  
23 constraints comprises constraints selected from a group of constraints comprising:  
24            legally mandated constraints to constrain operation of the application according to  
25 legal principles;

1 company-mandated constraints to constrain operation of the application according  
2 to preferences of a company that operates the application;

3 customer constraints to constrain operation of the application according to  
4 preferences of customers;

5 cultural constraints to constrain operation of the application according to cultural  
6 aspects; and

7 end user constraints to constrain operation of the application according to  
8 preferences of an end user.

9  
10 27. (Original) A method for operating a server application, comprising:

11 receiving requests from multiple clients;

12 processing the requests to produce replies;

13 structuring the reply to define how the reply will appear when presented at the  
14 client; and

15 constraining said structuring according to a set of one or more constraints to  
16 customize appearance of the reply, the constraints comprising:

17 legally mandated constraints to constrain appearance of the reply according to  
18 legal principles;

19 company-mandated constraints to constrain appearance of the reply according to  
20 preferences of a company that operates the application;

21 customer constraints to constrain appearance of the reply according to preferences  
22 of customers;

23 cultural constraints to constrain appearance of the reply according to cultural  
24 aspects; and

1       end user constraints to constrain appearance of the reply according to preferences  
2 of an end user.

3

4       28. (Original) A method as recited in claim 27, further comprising adding or  
5 removing constraints to change the set of constraints being applied to the structuring of  
6 the reply.

7

8       29. (Original) One or more computer-readable media comprising computer-  
9 executable instructions that, when executed, direct an application server to:

10       generate replies in response to client requests; and

11       structure the replies according to a hierarchy of constraints to customize the  
12 replies, the constraints comprising a combination of one or more following constraints:

13       legally mandated constraints to constrain appearance of a reply according to legal  
14 principles;

15       company-mandated constraints to constrain appearance of the reply according to  
16 preferences of a company that operates the application;

17       customer constraints to constrain appearance of the reply according to preferences  
18 of customers;

19       cultural constraints to constrain appearance of the reply according to cultural  
20 aspects; and

21       end user constraints to constrain appearance of the reply according to preferences  
22 of an end user.

23

24       30. (Currently amended) [[The]] A server system as recited in claim 1, wherein  
25 the constraints are expressed as metadata.

1  
2       31. (Currently amended) [[The]] A server system as recited in claim 1, wherein  
3 the constraints of one constraint layer can have the effect of overriding the constraints of  
4 another, lower, constraint layer.

5  
6       32. (Currently amended) [[The]] A server system as recited in claim 1, wherein  
7 the constraints define presentation aspects of a reply sent to a customer.

8  
9       33. (New) A server system as recited in claim 1, wherein each constraint layer  
10 represents a different source entity that customizes the application.

11  
12       34. (New) A server system as recited in claim 9, wherein each constraint layer  
13 represents a different source entity that customizes the application.

14  
15       35. (New) A computer software architecture as recited in claim 17, wherein each  
16 constraint layer represents a different source entity that customizes the application.

17  
18       36. (New) A method as recited in claim 24, wherein the hierarchy includes  
19 multiple constraint layers, and wherein each constraint layer represents a different source  
20 entity that customizes the application.

21  
22       37. (New) A method as recited in claim 27, wherein the constraints are associated  
23 with a hierarchy having multiple constraint layers, and wherein each constraint layer  
24 represents a different source entity that customizes the application.

1           38. (New) One or more computer-readable media of claim 29, wherein the  
2 hierarchy includes multiple constraint layers, and wherein each constraint layer  
3 represents a different source entity that customizes the application.

4

5           39. (New) A server system as recited in claim 1, wherein the hierarchy comprises  
6 each of:

7               a constraint layer that contains legally mandated constraints to constrain operation  
8 of application according to legal principles;

9               a constraint layer that contains company-mandated constraints to constrain  
10 operation of the application according to preferences of a company that operates the  
11 application;

12               a constraint layer that contains customer constraints to constrain operation of the  
13 application according to preferences of customers;

14               a constraint layer that contains cultural constraints to constrain operation of the  
15 application according to cultural aspects;

16               a constraint layer that contains end user constraints to constrain operation of the  
17 application according to preferences of an end user.

18

19           40. (New) A server system as recited in claim 9, wherein the constraint hierarchy  
20 comprises each of:

21               a constraint layer that contains legally mandated constraints that constrain the  
22 presentation layer to structure the replies to comply with certain legal principles;

23

24

25

1           a constraint layer that contains company-mandated constraints that constrain the  
2 presentation layer to structure the replies according to preferences of a company that  
3 operates the application;

4           a constraint layer that contains customer-oriented constraints that constrain the  
5 presentation layer to structure the replies according to preferences of customers;

6           a constraint layer that contains cultural constraints that constrain the presentation  
7 layer to structure the replies according to cultural aspects; and

8           a constraint layer that contains end user constraints that constrain the presentation  
9 layer to structure the replies according to preferences of end users.

10  
11           41. (New) A computer software architecture as recited in claim 17, wherein the  
12 constrain hierarchy comprises each of:

13           a constraint layer that contains legally mandated constraints to constrain operation  
14 of the application according to legal principles;

15           a constraint layer that contains company-mandated constraints to constrain  
16 operation of the application according to preferences of a company that operates the  
17 application;

18           a constraint layer that contains customer constraints to constrain operation of the  
19 application according to preferences of customers;

20           a constraint layer that contains cultural constraints to constrain operation of the  
21 application according to cultural aspects; and

22           a constraint layer that contains end user constraints to constrain operation of the  
23 application according to preferences of an end user.

1       42. (New) A method as recited in claim 24, wherein the hierarchy of constraints  
2 comprises each of:

3           legally mandated constraints to constrain operation of the application according to  
4 legal principles;

5           company-mandated constraints to constrain operation of the application according  
6 to preferences of a company that operates the application;

7           customer constraints to constrain operation of the application according to  
8 preferences of customers;

9           cultural constraints to constrain operation of the application according to cultural  
10 aspects; and

11           end user constraints to constrain operation of the application according to  
12 preferences of an end user.

13

14       43. (New) A method as recited in claim 27, wherein the constraints comprise each  
15 of the legally mandated constraints, the company-mandated constraints, the customer  
16 constraints, the cultural constraints, and the end user constraints.

17

18       44. (New) One or more computer-readable media of claim 29, wherein the  
19 constraints comprise each of the legally mandated constraints, the company-mandated  
20 constraints, the customer constraints, the cultural constraints, and the end user  
21 constraints.